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Title: A starting block

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Patent- og Varemærkestyrelsen  
Økonomi- og Erhvervsministeriet

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PATENT- OG VAREMÆRKESTYRELSEN

Modtaget

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A STARTING BLOCKField of the Invention

The present invention relates to a starting block for  
5 athletic running, comprising an elongated frame having a longitudinal axis, which extends between a first end and a second end of the frame, said frame being adapted to be attached to a ground in both ends of the frame, at least one take-off block to be arranged in connection with said  
10 frame, the take-off block comprises a take-off surface.

Background Art

Starting blocks for athletic running is known in the  
15 prior art, which starting blocks comprises elements as set forth by way of introduction. The starting blocks are used in connection with for instance athletes are lining up for the start in a 100, 200 or 400 metre run.

20 In order to provide the best starting conditions for the athletes which are participating in the sprint the starting blocks can be individually adapted to each athlete having regard to for instance their physical, which leg they are using to take-off with, their running style etc.

25 In the known starting blocks this are carried out by placing the take-off blocks on the frame having a predetermined distance between them which is suitable for the individually athlete.

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In order to obtain better and better time for the athletes on the short runs an extensive research is carried out especially in view of that every 1/100 second, which may be shorten of the final time is important.

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Most of this research is concerned to how the take-off of the starting block in the start is optimised, how the running style of the athletes are optimised, the physical training of the athletes as well as the running shoe.

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Especially, research have shown that several metres of the run, after start, are used by the athletes to obtaining their optimal running style and thereby achieve their maximum running speed. As a consequence the athlete is 15 using, after leaving the starting block, a great amount of force for rapidly obtaining the optimal running style which also is caused by the large laterally movements of the athlete during the start.

20 Summary of the Invention

An object of the present invention is to wholly or partly overcome the above disadvantages and drawbacks of the prior art. More specifically, it is an object to provide 25 a starting block which reduces the laterally movements of the athlete just after they have left the starting block.

The above object, together with numerous other objects, advantages and features, which will become evident from 30 the below description, are accomplished by a solution in accordance with the present invention by the take-off surface is angular adjustable in a laterally direction in relation to the longitudinal axis of the frame.

Hereby is obtained that the athlete may achieve better results, i.e. times. Additionally, the starting as well as the running style may be essentially improved as the 5 inventive starting block substantially completely or at least partly eliminates the large laterally movements of the athlete just after start.

By adjusting the angle of the take-off surface in a laterally direction in relation to the longitudinal axis of the frame it is further achieved that the first steps of the athlete, just after leaving the inventive starting block, will be near to the centre of the optimal running path and whereby the athlete is avoiding the laterally 10 movements. Accordingly, the athlete may use substantially 15 most of the force from the take-off to rapidly building up the maximum speed without loosing to much energy due to the laterally movements as the matter is with the prior starting blocks. Furthermore, the running style of 20 the athlete is more aesthetic as the laterally movements is reduced.

Further preferred embodiments according to the invention 25 are defined in the depended claims.

#### Brief Description of the Drawings

The invention and its many advantages will be described in more detail below with reference to the accompanying 30 schematic drawings, which for the purpose of illustration show some non-limiting embodiments and in which

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Fig. 1 shows in a perspective view a starting block according to the invention,

Fig. 2 shows in a side view the starting block of Fig. 1,

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Fig. 3 shows in a top view the starting block of Fig. 1,

Fig. 4 shows in a perspective view a take-off block according to the invention seen from the side, and

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Fig. 5 shows in a perspective view the take-off block of Fig. 4 seen from the back.

All the figures are highly schematic and not necessarily 15 to scale, and they show only parts which are necessary in order to elucidate the invention, other parts being omitted or merely suggested.

#### Description of Preferred Embodiments

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Fig. 1 shows in a perspective view a starting block 1 according to the invention. The starting block 1 comprises an elongated frame 2 having a longitudinal axis (not shown), which extends between a first end 3 and a second 25 end 4 of the frame 2.

The frame 2 is adapted to be attached to a ground in both ends 3, 4 of the frame 2. In the shown embodiment the frame 2 has mounted elements 5, 6 having holes, wherein 30 attachment means (not shown) are to be inserted into the ground and thereby fixate the frame 2. Said attachment means may for instance be pins or spikes.

In this embodiment the frame 2 is made of a profile having an U-formed configuration, said profile preferably being of metal. In both vertically flanges of the U-formed profile slits 7 are arranged having a mutual spaced apart relationship along the elongated frame 2. Said slits 7 is adapted to receive fastening means of take-off blocks 8, 9 and furthermore enabling that the take-off blocks 8, 9 may be individually adjusted along the frame 2.

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The take-off blocks 8, 9 will be further described below in connection with Figs. 4 and 5.

Fig. 2 shows in a side view the starting block 1 of Fig. 1. The starting block 1 is in this embodiment shown with a length L of approximately 850 mm, which is a standard length in the art. Furthermore, the two take-off blocks 8, 9 are shown displaced in relation to each other thereby enabling the sprinter to set up the starting block to his or hers preferred starting position as explained in the introductory part.

The take-off blocks 8, 9 comprise a take-off surface 10. In Fig. 2 it is furthermore shown that the take-off surfaces are angular adjustable in a vertical direction in relation to the ground, i.e. the take-off surface may be sloped. This angular adjustment is indicated by  $\alpha$ .

The take-off blocks 8, 9 comprise adjustment means 11 adapted to adjust the angle  $\alpha$  of the take-off surface 10 in relation to the ground. Said adjustment means 11 will be further described below in connection with Figs. 4 and 5.

Fig. 3 shows the starting block 1 of Fig. 1 seen from above. In this embodiment it is easily deduced that the take-off surfaces 10 of the take-off blocks 8, 9 are angularly adjustable in a laterally direction in relation to the longitudinal axis of the frame 2.

Advantageously, the take-off surfaces 10 are angled towards the longitudinal axis of the frame 2 so that the 10 take-off surfaces 10 are turned against the frame 2.

According to the invention the take-off surfaces 10 may have an angle  $\beta$  of 0-20°, preferably of 2-10° in relation to the longitudinal axis of the frame 2.

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Fig. 4 shows in a perspective view a take-off block 8 according to the invention seen from the side.

On the side of the take-off block 8 fastening means 12 is 20 arranged. The fastening means 12 is in this embodiment shown as having an extension, i.e. a width. The extension makes it possible to achieve a secure fixation of the starting block 8 in a transverse direction when arranged on the frame. A screw 13 is furthermore arranged to engage with the slits of the frame whereby the starting 25 block is secured in the longitudinal direction of the frame.

The take-off surface 10 comprises in this embodiment two 30 surfaces 14, 15 having an angle in relation to each other. Hereby is obtained that the take-off surface 10 may be adapted to the form and the anatomy of the foot of the athlete.

According to a preferred embodiment of the invention the take-off surface may comprise a resilient material, such as for instance rubber or synthetic materials, whereby a 5 foot support surface, i.e. the take-off surface, is obtained having elastic or resilient properties.

Furthermore, a groove 16 is arranged in the side of take-off block 8. Said groove 16 being adapted to receive a 10 tap 11 which enables the angular adjustment of the take-off surface 10 in the vertical direction. The adjustment means 11 comprises a screw 17 which may be turned via the handle 18 so that the take-off surface 10 may be angled to fit a certain athlete.

15 In Fig. 5 is the take-off block 8 shown from the back. In this embodiment is adjustment means 20 adapted to adjust the angle of the take-off surface 10 in relation to the longitudinal axis of the frame. The adjustment means 20 20 may comprise a screw 21 and a bolt 22. By turning the handle 23 the take-off block starts to pivot around a turning point 24 whereby the take-off surface is being angled, preferably against the frame.

25 According to the invention the frame may further be attached to the ground substantially in between the ends of the frame. Hereby, a more rigid frame is provided which secures that the force the sprinter is using to take-off from the starting block is used for forward movement of 30 the athlete and not for bending the frame. This is especially important due to the fact that when using the inventive starting block wherein the take-off surface is angled a force will also be exerted on the frame in an

angle away from the longitudinal axis of the frame, which force essentially may bend the frame.

Advantageously, the take-off block may be adjustable  
5 along the frame.

According to an aspect of the invention may the frame have a width of 50 mm, preferably less than 35 mm, whereby it is obtained that the feet of the athletes in  
10 the starting block are placed near the centre of the optimal running path.

According to the invention may the inventive starting block be used in connection with starting procedures for  
15 sprints, such as 100, 200 and 400 metres run. However, the starting block may also be used in training purposes for other types of sport, wherein training of the legs, running style as well as speed are of high importance.

20 Although the invention above has been described in connection with preferred embodiments of the invention, it will be evident for a person skilled in the art that several modifications are conceivable without departing from the invention as defined by the following claims.

Claims

1. A starting block (1) for athletic running, comprising an elongated frame (2) having a longitudinal axis, which 5 extends between a first end (3) and a second end (4) of the frame (2), said frame (2) being adapted to be attached to a ground in both ends of the frame (2), at least one take-off block (8, 9) to be arranged in connection with said frame (2), the take-off block (8, 9) comprises a take-off surface (10), characterised in that 10 the take-off surface (10) is angular adjustable in a laterally direction in relation to the longitudinal axis of the frame (2).
- 15 2. A starting block (1) according to claim 1, wherein the take-off surface (10) is angled towards the longitudinal axis of the frame (2) so that the take-off surface (10) is turned against the frame (2).
- 20 3. A starting block (1) according to claims 1 or 2, wherein the take-off surface (10) has an angle of 0-20°, preferably of 2-10° in relation to the longitudinal axis of the frame (2).
- 25 4. A starting block (1) according to any one of the preceding claims, wherein the take-off block (8, 9) comprises adjustment means adapted to adjust the angle  $\beta$  of the take-off surface (10) in relation to the longitudinal axis of the frame (2).
- 30 5. A starting block (1) according to claim 4, wherein the adjustment means comprises a screw and a bolt.

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6. A starting block (1) according to claim 1, wherein the take-off surface (10) comprises at least two surfaces having an angle in relation to each other.

5 7. A starting block (1) according to claim 1, wherein the take-off surface (10) comprises a resilient material, such as for instance rubber or synthetic materials.

10 8. A starting block (1) according to claim 1, wherein the take-off surface (10) is angular adjustable in a vertical direction in relation to the ground.

15 9. A starting block (1) according to claim 8, wherein the take-off block (8, 9) comprises adjustment means adapted to adjust the angle of the take-off surface (10) in relation to the ground.

20 10. A starting block (1) according to any one of the preceding claims, wherein the frame (2) is further attached to the ground substantially in between the ends of the frame (2).

25 11. A starting block (1) according to any one of the preceding claims, wherein the take-off block (8, 9) is adjustable along the frame (2).

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Title

A starting block

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Abstract

The present invention relates to a starting block (1) for athletic running. Said starting block comprises an elongated frame (2) having a longitudinal axis, which extends between a first end (3) and a second end (4) of the frame (2), said frame (2) being adapted to be attached to a ground in both ends of the frame (2), at least one take-off block (8, 9) to be arranged in connection with said frame (2), the take-off block (8, 9) comprises a take-off surface (10). The starting block is characterised in that the take-off surface (10) is angular adjustable in a laterally direction in relation to the longitudinal axis of the frame (2).

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Fig. 1

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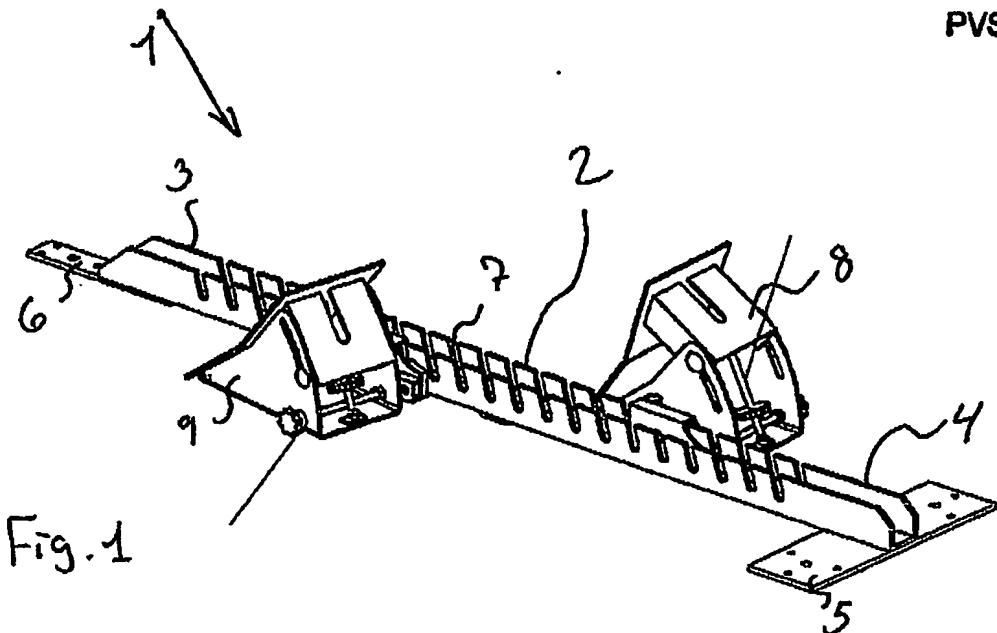


Fig. 1

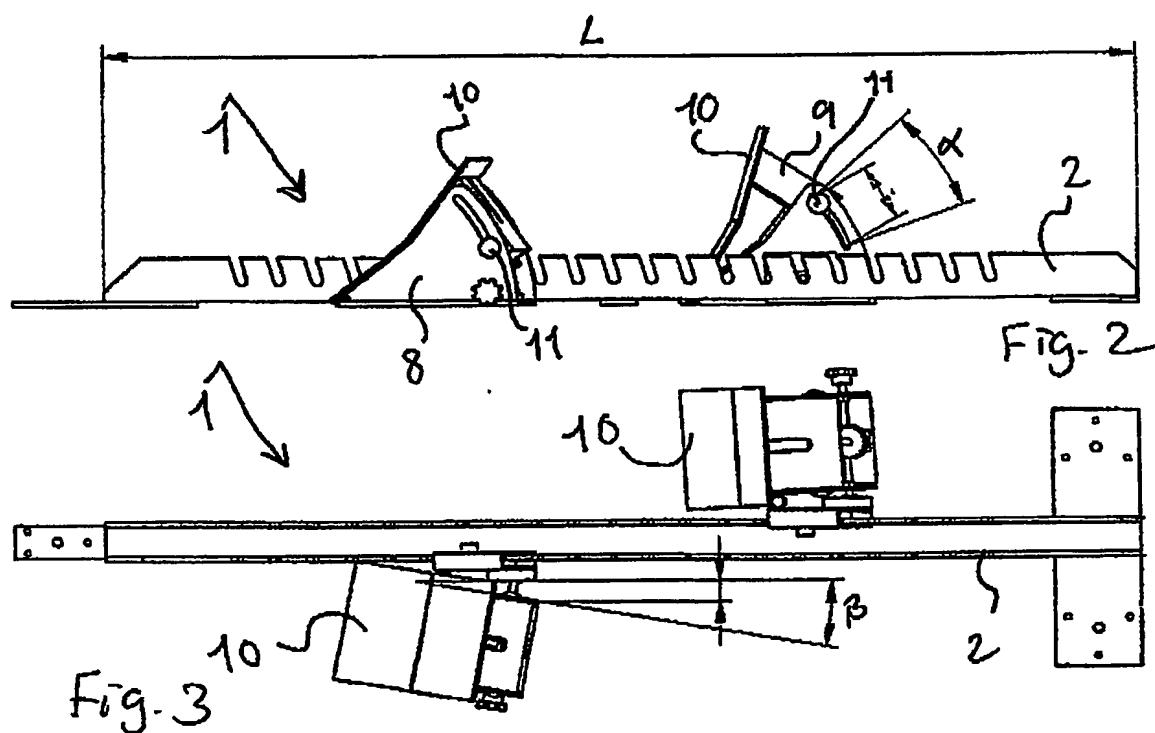


Fig. 3

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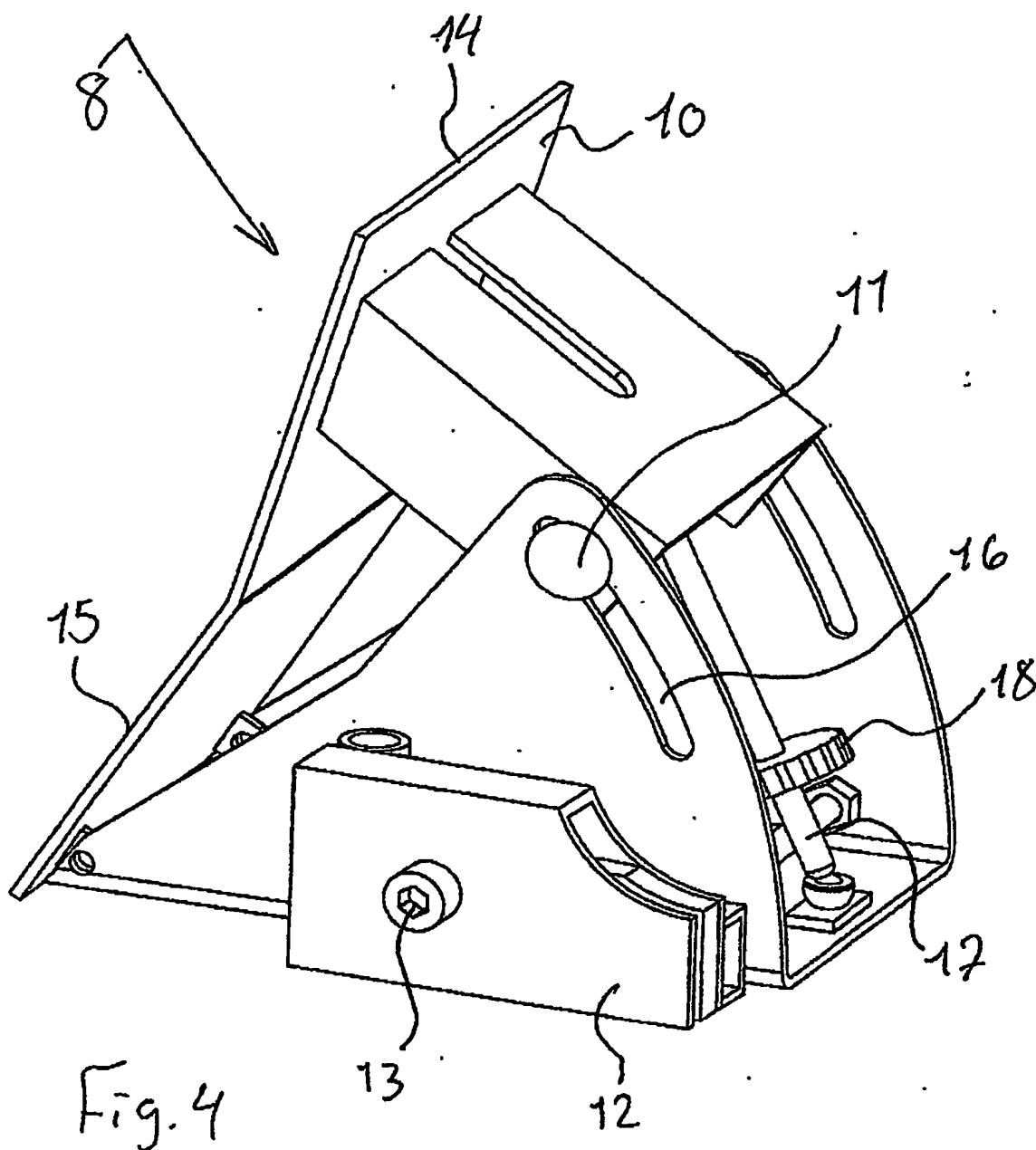
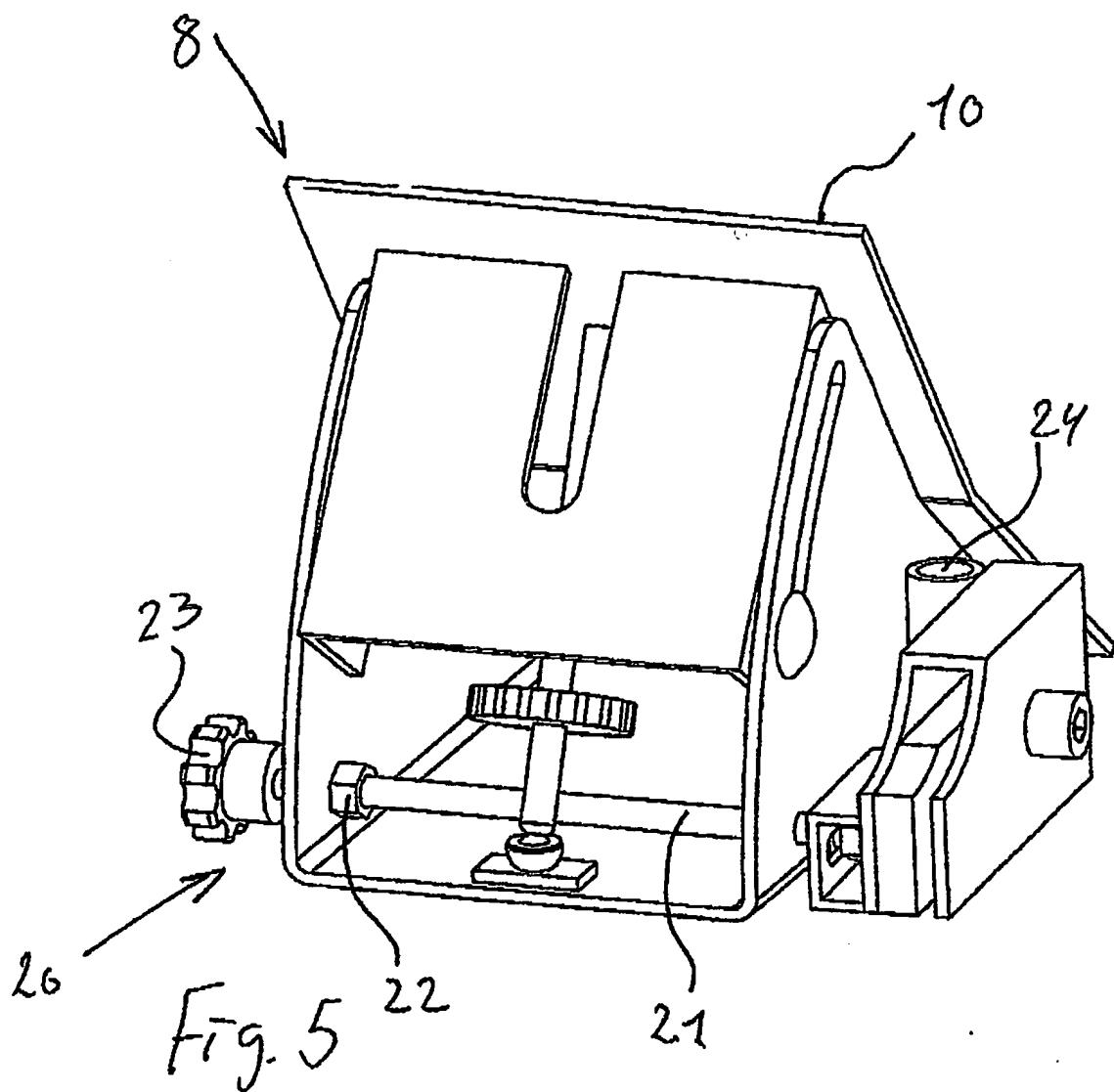


Fig. 4

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